Claims

We Claim:

1. A system for deploying content to devices, comprising:

a translator operative to receive data sent from devices, the translator operative to translate the data into a standardized format;

a content provider interface operative to receive the data in the standardized format and to provide content data in the standardized format; and

a transformer operative to receive the content data and to transform the content data into a format for a particular device.

2. The system according to claim 1, wherein the standardized format is an XML message.

3. The system according to claim 1, wherein the transformer is operative to select a transformation based on the pre-selected format and to transform the content data using the selected transformation.

4. The system according to claim 3, wherein the transformation is selected from a group of XSL style sheets.

5. The system according to claim 3, wherein the transformer is operative to select a plurality of transforms and to apply the plurality of transforms in at least one of: sequentially, independently, or a combination of both, to transform the content data.

6. The system according to claim 1, further comprising an extractor operative to access session information about a browser of the particular device.

7. The system according to claim 1, further comprising a composer operative to generate a combined response to the particular device from a plurality of responses received to a plurality of requests provided to a plurality of content providers.

8. The system according to claim 1, wherein the devices are wireless devices.

9. A method of communicating with devices that use different communication schemes, comprising:

receiving first data from one or more devices;

translating the first data into a standardized format;

providing the translated data to a content provider interface;

receiving second data response from the content provider interface in the standardized format;

transforming the second data into content type specific forms for the one or more devices; and

forwarding the transformed second data to the one or more devices.

10. The method according to claim 9, further comprising:

extracting information about the device from the first data.

11. The method according to claim 10, wherein the extracted information includes device specific features.

12. The method according to claim 10, wherein the transforming step comprises:

selecting an XSL style sheet based on the extracted information; and

using the selected XSL style sheet to transform the second data.

13. The method according to claim 10, wherein the extracted information includes information about a browser.

14. The method according to claim 10, wherein the extracted information includes a message key.

15. The method according to claim 14, further comprising:
selecting the content provider interface based on the message key.

16. The method according to claim 14, wherein the message key includes at least one of:
a vertical market;
an action;
an action type; and
a content provider identifier (ID).

17. The method according to claim 16, wherein the vertical market is a brokerage market, the action is a quote, the action type is at least one of a request and a response, and the content provider ID corresponds to a particular brokerage.

18. The method according to claim 12, wherein at least two style sheets are selected and applied independently to the second data..

19. The method according to claim 12, wherein at least two style sheets are selected and applied to transform the second data

20. The method according to claim 19, wherein the style sheets are applied sequentially.

21. The method according to claim 19, wherein an order of applying the style sheets is pre-selected.

22. The method according to claim 19, wherein at least three style sheets are applied both independently and sequentially.

23. The method according to claim 9, wherein the first data is a request.

24. The method according to claim 23, wherein the request is an hyper-text transfer protocol (HTTP) request.

25. The method according to claim 9, wherein the second data is a response.

26. The method according to claim 9, wherein the standardized format of the second data is an XML message format.

27. The method according to claim 9, wherein the content provider is a third party.

28. The method according to claim 9, further comprising:

querying a provider database if the content provider is a new content provider; and

receiving a previously registered XSL style sheet associated with said new content provider from the provider database.

29. The method according to claim 9, wherein the providing step includes providing the translated data to more than one of the content providers, and further comprising:

composing a combined set using the second data of the more than one content providers.

30. The method according to claim 9, wherein said device is a wireless device.

31. A method for spontaneously sending data to a device, comprising:

sending data and an identifier (ID) to a transformer;

looking up the ID in a database to associate it with a device;

selecting a style sheet based on the device;

transforming the data using the selected style sheet into transformed data; and

forwarding the transformed data to the device.

32. The method according to claim 31, wherein the ID includes at least one of:

a device ID;

a user ID;

a client ID; and

a customer ID.

33. The method according to claim 31, wherein the database includes information about a browser.

34. The method according to claim 31, wherein the data includes information about a message key.

35. The method according to claim 31, wherein the message key includes at least one of:

a vertical market;

an action;

an action type; and

a content provider identifier (ID).

36. The method according to claim 35, wherein the vertical market is a brokerage market, the action is a threshold alert, the action type is a push, and the content provider ID corresponds to a particular brokerage.

37. The method according to claim 33, wherein at least two style sheets are selected and applied to transform the data.

38. The method according to claim 32, wherein the style sheets are applied at least one of: sequentially, independently and a combination of both.

39. The method according to claim 32, wherein an order of applying the style sheets is pre-selected.

40. The method according to claim 38 wherein the independent application is simultaneous.

41. The method according to claim 32, wherein the content provider is a third party service.

42. The method according to claim 32, further comprising:

querying a provider database if the content provider is a new content provider; and

receiving a previously registered XSL style sheet associated with said new content provider from the provider database.

43. The method according to claim 32, wherein said device is a wireless device.

44. A method for deploying markup content to browser applications comprising the following steps:

accepting inbound data;

transforming said inbound data into XML messages;

selecting a content provider interface;

forwarding said XML messages to the selected content provider interface;

receiving an XML message response from the content provider interface;

selecting at least one XSL style sheet from a group of XSL style sheets;

transforming said XML message response into outbound data using said at least one selected XSL style sheet; and

forwarding said outbound data to the browser application.

45. The method according to claim 44, further comprising:

extracting session information from said inbound request.

46. The method according to claim 44, further comprising:

transmitting said XML messages to a content provider.

47. The method according to claim 44, wherein said selecting step comprises:

selecting said content provider interface from a group of content provider interfaces based on a unique message key.

48. A method for deploying markup content to browser applications on devices, comprising:

accepting requests from devices;

processing said requests as synchronous messages via a block and wait mechanism;

retrieving information related to at least one of form data, session data, MIME data, and a message key in order to generate an XML stream;

parsing said XML stream into an XML message;

determining all content provider interfaces that can handle said XML message based on said message key;

selecting a content provider interface to process said XML message;

forwarding said XML message to said selected content provider interface;

receiving a response from said selected content provider interface;

selecting one or more XSL style sheets;

transforming said response into one or more forms using said selected XSL style sheets; and

forwarding said transformed response to said devices.

49. The method according to claim 48, further comprising the steps of:

creating a DOM; and

setting a runtime parameter to validate XML against a document type definition (DTD).

50. The method according to claim 48, wherein said device is a wireless device.

51. The method according to claim 48 wherein at least two XSL style sheets are selected and further comprising applying the style sheets at least one of sequentially and independently.

52. The method according to claim 51 wherein the independent application is done simultaneously.

53. The method according to claim 51 wherein an order of applying the XSL style sheets is pre-selected.

54. The method according to claim 48 wherein at least three XSL style sheets are selected and applying the style sheets at least one of sequentially, independently, and a combination of both.

55. The method according to claim 54 wherein the independent application is done simultaneously.

56. A method of communicating from a device to a controller using different communication schemes, comprising:

sending first data from one or more devices using one or more transmission formats to a controller; and

receiving from the controller second data using content specific forms for said one or more devices, wherein the first data is translated by the controller into a standardized format and conveyed to a content provider, and the second data is received by the controller from the content provider in the standardized format and is transformed by the controller into said content specific forms for the one or more devices.

57. A method of transforming data, comprising:

receiving a message;

extracting information from the message;

selecting transformation specifications based on the extracted information; and

applying the selected transformation specifications to the data.

58. The method of claim 57, further comprising retrieving the transformation specifications from a database.

59. The method of claim 57, further comprising cross-referencing the transformation specifications in the database to the extracted information.

60. The method of claim 57, wherein the message includes a message key.

61. The method according to claim 60 wherein the message key includes at least one of:

a vertical market;

an action;

an action type; and

a content provider identifier (ID).

62. The method of claim 57, wherein the message comprises session information including at least one of a user agent and a device type.

63. The method of claim 57, wherein the transformation specifications are specified as XSL style sheets.

64. The method of claim 63, wherein a single XSL style sheet is selected.

65. The method of claim 63, wherein multiple XSL style sheets are selected.

66. The method of claim 57, wherein the message is an XML message.

67. A method for applying multiple transformations to data, comprising:

selecting a plurality of transformation specifications based on information about the data; and

sequentially applying the transformation specifications to the data.

68. The method of claim 67, wherein a result of each interim transformation is well-formed XML.

69. The method of claim 67, wherein an order of applying the transformation specifications is pre-selected.

70. The method of claim 67, wherein the data is an XML message.

71. The method of claim 67, wherein the transformation specification is an XSL style sheet.

72. A method for applying multiple transformations to data, comprising:

selecting plurality of transformation specifications based on information about the data; and

independently applying the transformation specifications to the data, resulting in more than one output.

73. The method of claim 72, further comprising applying another transformation specification either before or after the independent application of the plurality of transformation specifications.

74. The method of claim 72 wherein the independent application is simultaneous.

75. In a content delivery system including a translator receiving data sent from devices and translating the data into a message, a method for converting the data into the message, the method comprising:

creating java bindings for each message in a document type definition;
wrapping the java bindings in a class; and
calling a method on the class to create the message.

76. The method of claim 75, wherein the message is an XML message.

77. A method of converting an HTTP request into a message, comprising:
receiving the HTTP request;
extracting form variables needed for the message from the HTTP request;
forming the message including the extracted form variables.

78. The method of claim 77 wherein the HTTP request includes a message key.

79. The method of claim 78, further comprising:
determining an action from the message key; and
determining the form variables associated with the action.

80. The method of claim 77 wherein the message is an XML message.

81. The method of claim 80 wherein XSL style sheets transform the form variables from the XML message.

82. The method of claim 81 wherein the XSL is registered in a database.

83. A system for converting HTTP requests into a standard message format, comprising:
a message controller receiving the HTTP request; and
a request transformer to parse form variables out of the HTTP request to generate an XML stream.

84. The system of claim 83, further comprising:

at least one database;

an XML transformer to parse the XML stream into an output stream and to transform the XML stream using XSL transforms by retrieving information from the at least one database based on specifications in the HTTP request.

85. The system of claim 84 wherein the XSL transforms are registered in the database.